epiTRENDS

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Identifying and Managing Persons with Chronic Hepatitis B Virus (HBV) Infections

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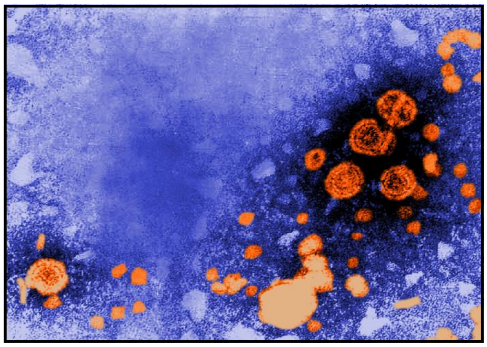
Infection with hepatitis B virus (HBV) causes acute and chronic disease. Transmission occurs by percutaneous and permucosal exposure to infectious blood or body fluids. The most common risk factor in the United States is sexual contact with an infected person, but the virus can also be transmitted by sharing injecting drug equipment and through perinatal and occupational exposures.



Large round hepatitis B virions ("Dane particles") Photo courtesy of Dr. Erskine Palmer, CDC

Early identification of persons with chronic HBV infections permits more timely medical management and education regarding preventing transmission. In addition, detecting persons with chronic HBV infections is important so that their contacts can be identified and vaccinated if susceptible. The Centers for Disease Control and Prevention (CDC) recently published recommendations for the identification and public health management of persons with chronic HBV infection (MMWR 2008;57[RR08]:1–20). The content of this article is summarized below.

Chronic Hepatitis B

The risk for chronic HBV infection following acute infection is inversely related to age at the time of infection. Over 90% of infants infected perinatally develop a chronic infection while less than 5% of acutely infected adults develop a chronic infection. The risk of developing chronic infection is also higher in persons who are immunosuppressed from either disease or therapy.

Chronic HBV infections are more common among certain populations including persons born in regions of the world where the prevalence of hepatitis B is high or intermediate (see map on page 2), human immunodeficiency virus (HIV)-positive persons, intravenous drug users, and men who have sex with men. CDC estimates that 0.3–0.5% of U.S. residents are chronically infected with HBV.

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Hepatitis B Surface Antigen Prevalence

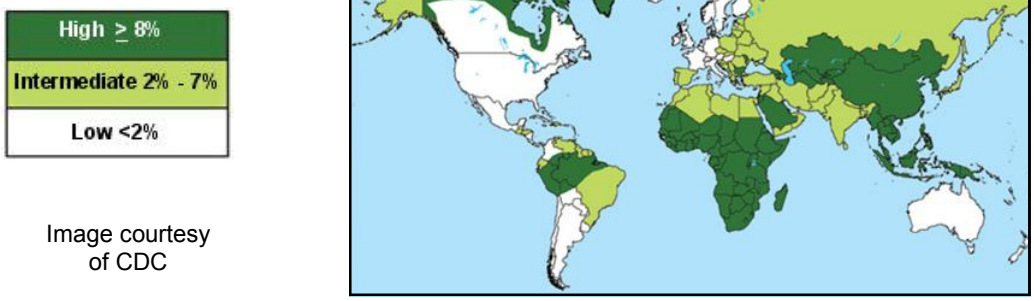

Image courtesy of CDC

The detection of hepatitis B surface antigen (HBsAg) in the blood indicates either an acute or chronic HBV infection. A chronic infection is confirmed by the absence of IgM antibody to hepatitis B core antigen (anti-HBc) or by persistence of HBsAg or HBV DNA for at least six months. All HBsAg-positive persons should be referred for medical treatment and educated on ways to reduce transmission. Contacts should be identified and evaluated, and those who are susceptible should be vaccinated against hepatitis B. The presence of virus as indicated by HBsAg indicates the person can transmit the infection through blood or other body fluids. Blood and to a lesser extent semen and saliva have been shown to be infectious. Persons with chronic HBV infections are the source for most new infections.

Recommendations for Hepatitis B Testing

The primary test used to identify persons with chronic HBV infection is a serologic test for HBsAg. Routine HBsAg testing was previously recommended for hemodialysis patients, pregnant women, infants born to HBsAg-positive women, household contacts and sex partners of acute or chronic hepatitis B infected persons, persons born in countries with HBsAg prevalence of ≥8%, persons who were the source of body fluid exposures that might warrant post-exposure prophylaxis, and persons infected with HIV.

Routine HBsAg testing is now recommended for the following additional groups:

- persons born in geographic regions in which HBsAg prevalence is ≥2%
- men who have sex with men
- injection-drug users
- persons receiving cytotoxic or immunosuppressive therapy
- persons with persistently elevated alanine aminotransferase (ALT) or aspartate aminotransferase (AST) levels of unknown etiology

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Regions with HBsAg prevalence of ≥2% include much of Eastern Europe, Asia, Africa, the Middle East, and the Pacific Islands, as well as certain countries or populations in the Americas. Limited studies suggest that many people born in these regions are unaware of being chronically infected with HBV.

Geographic regions* with hepatitis B surface antigen (HBsAg) prevalence of ≥2%**

Region*	HBsAg prevalence ≥2%
Africa	All countries
Asia***	All countries
Australia and South Pacific	All countries except Australia and New Zealand
Middle East	All countries except Cyprus and Israel
Eastern Europe	All countries except Hungary
Western Europe	Malta, Spain, and indigenous populations in Greenland
North America	Alaska Natives and indigenous populations in Northern Canada
Mexico and Central America	Guatemala and Honduras
South America	Ecuador, Guyana, Suriname, Venezuela, and Amazonian areas of Bolivia, Brazil, Coumbia, and Peru
Caribbean	Antigua-Barbuda, Dominica, Grenada, Haiti, Jamaica, St. Kitts-Nevis, St. Lucia, and Tuks and Caicos Islands

* A complete list of countries in each region is available at http://wwwn.cdc.gov/travel/destinationList.htm

** Estimates of prevalence of HBsAg, a marker of chronic hepatitis B virus infection, are based on limited data and might not reflect current prevalence in countries that have implemented childhood hepatitis B vaccination. In addition, HBsAg prevalence might vary within countries by subpopulation and locality.
*** Asia includes three regions: Southease Asia, East Asia, and Northern Asia.
Table courtesy of CDC: MMWR September 19, 2008 / 57(RR08);1-20

Certain persons should be screened for chronic HBV infection regardless of reported vaccination status because vaccine may have been administered after they were infected. These include persons born in geographic regions with HBV prevalence of ≥2%, U.S.-born persons not vaccinated as infants whose parents were born in geographic regions with HBV prevalence of ≥8%, and persons receiving hepatitis B vaccination after they initiated risk behaviors through sexual activity or injection drug use. It may be appropriate to initiate vaccination at the time of serologic testing if the person may not return for test results.

Public Health Recommendations

Persons identified as having chronic HBV infection should receive medical care along with education about prevention of HBV transmission to other persons, including to infants, if the person is a woman of childbearing age. Appropriate medical care should include a clinical evaluation by a health care provider experienced in recognizing and managing HBV-related liver disease. Persons with chronic HBV infection should be tested for hepatitis A and should receive 2 doses of hepatitis A vaccine if it is determined that they are not already immune. Alcohol consumption should be avoided or limited in order to protect the liver from further damage.

Education about prevention of transmission should include advice on properly covering cuts and skin lesions, avoiding sharing personal items such as razors or toothbrushes, using bleach to clean areas or items contaminated by blood, disposing of body fluids and medical waste properly, refraining from donating blood/plasma or body tissue, and using barrier methods to protect susceptible sex partners. It is also important to provide pregnancy-related information to women of child-bearing age and their partners.

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Each newly identified HBsAg positive person should be asked to identify potentially exposed contacts (sexual partners, household contacts, and persons with whom the infected person has shared needles). These contacts should be tested and receive a dose of vaccine, then subsequently vaccinated if found to be susceptible, or referred for medical management as needed if already infected.

The MMWR article also includes a cost analysis and a review of serologic markers of HBV infection. The full report is available at:

http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5708a1.htm

Abdominal distention caused by hepatoma from chronic hepatitis B infection. Photo courtesy of CDC / Patricia Walker, MD

These new recommendations could have several impacts on public health activities. Increasing the number of persons tested for chronic HBV infection will increase the number of reports to local health jurisdictions. The new recommendation to test all persons from geographic regions with HBsAg prevalence of ≥2% is particularly likely to result in the identification of additional cases. Furthermore, evaluating the contacts of these additional cases may significantly increase the workload in many local health jurisdictions.
